



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/359,686 07/23/99 NIEBOER

R 2907-101P

EXAMINER

TM02/0329

ANTHONY LAWS BIRCH
6915 BARRETT LANE
BETHESDA MD 20814

THOMPSON JR, F

ART UNIT

PAPER NUMBER

2165

DATE MAILED:

03/29/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/359,686

Applicant(s)

NIEBOER et al.

Examiner

Forest Thompson Jr.

Group Art Unit
2165



☒ Responsive to communication(s) filed on 1/25/01

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

- ☒ Claim(s) 1-18 and 20-44 is/are pending in the application.
- Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-18 and 20-44 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☒ The drawing(s) filed on 1/25/01 is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of References Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s) _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2165

DETAILED ACTION

Response to Amendment

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action (See Paper No. 2). The text of those sections of Title 35, U.S. Code not otherwise provided in a prior Office action will be included in this action where appropriate.
2. This action is responsive to the amendment (amendment A) filed 25 January 2001 (see Paper #4). Amendment A canceled claim 19 and amended claims 1, 24-41 and added new claims 42-44. **Claims 1-18 and 20-44 are pending.**
3. **Claims 1-18 and 20-44 have been examined.**

Drawings

4. The corrected or substitute drawings were received on 01/25/2001. These drawings are copies that have the words appearing to run together or smudged and have copier lines copied onto them. These drawings are sufficient for examination, but new formal drawings must be submitted when the application is allowed.

Claim Rejections - 35 USC § 112

Art Unit: 2165

5. The specification was objected to under 37 CFR 1.71 because the specification does not set forth the computer program listing that encompasses the invention. Examiner withdraws this objection based on applicant's response.
6. The independent claims (claims 1, 24, and 41) were objected to in Paper #2. Applicant's amendment overcomes this objection. Therefore, examiner withdraws the objection.
7. The new independent claim 44 state "including the represented as" at line 3 on pg. 9. Examiner cannot, with certainty, interpret this claim. For purposes of examination below, examiner has interpreted this claim to read "including price represented". Correction is required.
8. The new independent claim 44 includes bracketed language that is not appropriate for a new claim, as it has not been amended yet. Correction is required.

Claim Rejections - 35 USC § 102

9. Claims 1-4, 8-9, 16, 24-27, 29, 36, and 41-44 are rejected under 35 U.S.C. 102(e) as being anticipated by **Shepherd** (U.S. Patent No. 6,134,536).

As per claim 1, **Shepherd** discloses:

Art Unit: 2165

- a variable number of trader terminals for entering an order for a security (col. 3 lines 38-52; col. 5 lines 37-51);
- at least one controller computer coupled to each of the trader terminals over a network and receiving as inputs (a) each algorithm with its corresponding constraints (col. 6 line 37 - col. 7 line 45; fig. 1);
- means for matching, in accordance with the constraints and conditions, algorithmic buy orders with algorithmic sell orders (col. 7 lines 7-11; col. 16 lines 6-40; col. 39 lines 51-65); and
- means for matching or comparing, in accordance with constraints and conditions, algorithmic buy/sell orders with algorithmic or non-algorithmic sell/buy orders through the use of external multiple data sources (col. 7 lines 7-11; col. 16 lines 6-40); and
- at least one external price feed depicting prices of various securities and contracts from multiple exchanges (col. 8 line 53 - col. 9 line 5).

As per claim 2, **Shepherd** discloses the order price, as represented by an algorithm, includes an order quantity subject to another algorithm (col. 16 lines 33-40; col. 33 lines 1-11; col. 42 line 40 - col. 43 line 26).

As per claim 3, **Shepherd** discloses the controller computer matches/compares orders in real-time as each order is received at the controller computer and as each new price of each other conditional security is received at the controller computer (fig. 42; col. 46 line 61 - col. 47 line 15; col. 49 line 1 - col. 51 line 5).

Art Unit: 2165

As per claim 4, **Shepherd** discloses means for maintaining the identity of the terminal on which the order was entered (col. 16 lines 41-57).

As per claim 8, **Shepherd** discloses the independent variable may include multiple independent variables (col. 17 line 37 - col. 18 line 19).

As per claim 9, **Shepherd** discloses the sell order includes a sell short order (col. 58 lines 52-61).

As per claim 16, **Shepherd** discloses the price may be a yield (col. 18 line 52 - col. 19 line 13).

As per claim 24, **Shepherd** discloses:

- a display device (col. 7 lines 28-45);
- an input device (col. 7 lines 28-45);
- a computer (col. 7 lines 28-45);
- a comparator for comparing all incoming orders relative to outgoing orders (col. 39 - col. 40 line 11); and
- a sorter that resequences the orders in real-time in the display field (col. 40 lines 41-62).

Claim 25 is written as an apparatus and contains the same limitations as claim 2; therefore, the same rejection is applied.

Art Unit: 2165

Claim 26 is written as an apparatus and contains the same limitations as claim 3; therefore, the same rejection is applied.

Claim 27 is written as an apparatus and contains the same limitations as claim 4; therefore, the same rejection is applied.

Claim 29 is written as an apparatus and contains the same limitations as claim 9; therefore, the same rejection is applied.

Claim 36 is written as an apparatus and contains the same limitations as claim 16; therefore, the same rejection is applied.

As per claim 41, **Shepherd** discloses:

- a variable number of trader terminals for entering an order for an item (col. 3 lines 37-52; col. 5 lines 37-51)
- controller computer means coupled to each of the trader terminals over a communications network and receiving as inputs (a) each algorithm with its corresponding constraints (fig. 1; col. 6 line 37 - col. 7 line 45);
- means for matching, in accordance with the constraints and conditions, algorithmic buy orders with algorithmic sell orders (col. 7 lines 7-11; col. 16 lines 6-40); and
- means for matching or comparing, in accordance with constraints and conditions, algorithmic buy/sell orders with non-algorithmic sell/buy orders (col. 8 line 57 - col. 9 line 5; col. 16 lines 6-40; col. 39 lines 51-65).

Art Unit: 2165

Claim 42 is written as a network and contains the same limitations as claim 24; therefore, the same rejection is applied.

Claim 43 is written as a network and contains the same limitations as claim 24; therefore, the same rejection is applied.

As per claim 44, **Shepherd** discloses:

- a variable number of trader terminals for entering an order for an item (col. 3 lines 37-52; col. 5 lines 37-51)
- controller computer means coupled to each of the trader terminals over a communications network and receiving as inputs (a) each algorithm with its corresponding constraints (fig. 1; col. 6 line 37 - col. 7 line 45);
- means for matching, in accordance with the constraints and conditions, algorithmic or non-algorithmic buy orders with algorithmic or non-algorithmic sell orders (col. 7 lines 7-11; col. 16 lines 6-40); and
- means for matching or comparing, in accordance with constraints and conditions, algorithmic buy/sell orders with non-algorithmic sell/buy orders (col. 8 line 57 - col. 9 line 5; col. 16 lines 6-40; col. 39 lines 51-65).
- simultaneously executing a trade of said items in the same or diverse equity markets as a single electronically matched trade responsive to changes in price of said another item as the

Art Unit: 2165

independent variable (col. 13 lines 51-65), where **Shepherd** discloses *the specific offering is one which provides a contract ordering party with a specified contingent entitlement to transmission time units between the hours 1200-1800 daily on the NY-Boston link within a defined future period (termed, Prime TTU's) upon assignment by the ordering party--to the counterparty--of a calculated consideration amount of Prime TTUs on the ordering party's own NY-Boston line within another defined future period (these defined TTUs may or may not be convertible to TTUs on other city links). The TTU entitlement is contingent on the value, at contract maturity date, of the log of the difference between the ordering party's utilisation of the counterparty's network and the counterparty's utilisation of the ordering party's network, during a specified prior period ending on the contract maturity date.*

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 5-7, 10-15, 17-23, 28, 30-35, and 37-40 rejected under 35 U.S.C. 103(a) as being unpatentable over .

Art Unit: 2165

As per claim 5, **Shepherd** does not disclose specifically the order algorithm can be represented as a line in two-dimensional space with constraints having the price of one security as one axis and the price of another security as its other axis. Official Notice is taken that conditional or minimum and maximum acceptable prices for products/items/etc. are old and well known in the art. Minimum and maximum acceptable or threshold prices are used to set the acceptable price range and reduce the submission of bids/quotes/offers that will not necessarily be accepted. Conditional prices may be associated with price, quantity, time of delivery, or other aspects relating to the order. These prices may be determined by comparison of historical data for securities, since the users are concerned with securities. **Shepherd** discloses graphing sales/offer data (see fig. 47-59). Official Notice is taken that by graphing historical data, a user may determine a price that meets the price range requirements/considerations of previous sales or acquisitions (e.g., minimum or maximum acceptable prices). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to combine old and well known art with **Shepherd** and old and well known art to disclose the order algorithm can be represented as a line in two dimensional space with constraints having the price of one security as one axis and the price of another security as its other axis, because this increases the utility of the invention as well as implementing aspects portrayed in the figures of **Shepherd** through comparison of data, as well as making it more appealing (understandable) to users.

Art Unit: 2165

As per claims 6-7, 10-15 and 30-35, Official Notice is taken that in the stock market environment, the instrument to be traded, bought or sold may include bonds, warrants, convertible securities, options, futures, forward contracts, swap contracts. Instruments are determined by the current market as determined by users. **Shepherd** discloses *the entitlement for each outcome can be in the form of `money` payoffs (both positive and negative) at maturity of a matched contract, or can be other types of compensation, possibly in the form of goods, services, promises, credits or warrants* (Col. 4 lines 40-44). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to combine old and well known art with **Shepherd** to disclose the instrument may include bonds, warrants, convertible securities, options, futures, forward contracts, swap contracts, because these are desirable to participants/users/buyers/sellers in the stock market.

As per claims 17-18 and 37-39, Official Notice is taken that the possible dependency of the price on one or more of several factors (such as current value, a volatility, a yield, a yield spread or relative favorability) was old and well known in the art at the time the invention was made. For example, **Shepherd** discloses *the matching process described is one which seeks to identify, for each ordering party's order, a counterparty offering the lowest "price bid" for an order subject to this price being at or below the specified maximum "price" the ordering party has indicated it is prepared to pay* (col. 17 lines 32-36), and *secondary risk management contracts are pre-existing "primary" risk management contracts offered for trade (individually*

Art Unit: 2165

*or as a portfolio) by a "risk-counterparty" stakeholder to the underlying contract (col. 58 lines 43-46). These are factors that can influence desirability of particular security instruments to buyers and sellers. Additionally, Official Notice is taken that traders make decisions relative to buying and selling that are influenced by current values of securities. To make a profit, traders must buy and sell securities at values that profit them. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to combine old and well known art with **Shepherd** to disclose the price may be a current value, a volatility, a yield, a yield spread, or the relative favorability is determined by the current value, because this affects the desirability of purchasing or selling a security instrument and influences buyers and sellers.*

As per claims 19-23, **Shepherd** does not explicitly disclose the requirement that another security is traded contemporaneously; that no transaction can occur when the independent variable is above or below set limits; that the price is not to exceed a specified level regardless of the results produced by the algorithm; that the price is not to be less than a specified level regardless of the results produced by the algorithm; or the requirement that the orders be matched/compared without the use of prices fed from said external multiple exchanges.

Shepherd does disclose *individual CONTRACT APPS are responsible for performing the above-described tasks according to the specific rules they embody (col. 9 lines 20-22).* Also, Official Notice is taken that the use of rules to manipulate data fields was old and well known in the art at the time the invention was made. Database applications/systems utilize rules to

Art Unit: 2165

determine the manner in which particular data fields may be manipulated in a database. Generally, these rules predetermine the manner in which identified data fields may be manipulated in database operations. The use of such rules is allowed (or required) in most database applications. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to combine old and well known art with **Shepherd** to disclose one of the conditions is the requirement that another security is traded contemporaneously; that no transaction can occur when the independent variable is above or below set limits; that the price is not to exceed a specified level regardless of the results produced by the algorithm; that the price is not to be less than a specified level regardless of the results produced by the algorithm; or the requirement that the orders be matched/compared without the use of prices fed from said external multiple exchanges, because these are old and well known, as well as obvious, requirements used in the securities markets.

Claim 28 is written as an apparatus and contains the same limitations as claim 5; therefore, the same rejection is applied.

Claim 30 is written as an apparatus and contains the same limitations as claim 10; therefore, the same rejection is applied.

Claim 31 is written as an apparatus and contains the same limitations as claim 11; therefore, the same rejection is applied.

Art Unit: 2165

Claim 32 is written as an apparatus and contains the same limitations as claim 12; therefore, the same rejection is applied.

Claim 33 is written as an apparatus and contains the same limitations as claim 13; therefore, the same rejection is applied.

Claim 34 is written as an apparatus and contains the same limitations as claim 14; therefore, the same rejection is applied.

Claim 35 is written as an apparatus and contains the same limitations as claim 15; therefore, the same rejection is applied.

12. Claim 40 was rejected under 35 U.S.C. 103(a) as being unpatentable over **Shepherd** (U.S. Patent No. 6,134,536) as applied to claim 24 above, and further in view of **Borgato** (U.S. Patent No. 5,950,178).

As per claim 40, **Shepherd** does not disclose said display device further includes a ticker field, for displaying changing security values from external markets and an order entry field, and a wild card field. However, Official Notice is taken that it was old and well known in the art at the time the invention was made that representations of stock market activity may be represented on a graphics computer monitor/screen for monitoring activity related to stocks and the market. One example of this is **Borgato** which discloses:

- said display device further includes a ticker field, for displaying:

Art Unit: 2165

- changing security values from external markets (col. 13 lines 24-31); and
- current order information of the algorithms to be negotiated/traded (col. 13 lines 24-31); and
- a wild card field (col. 10 lines 60-63).

It would have been obvious to one skilled in the art at the time the invention was made to combine **Shepherd** and **Borgato** to disclose said display device further includes a ticker field, for displaying changing security values from external markets and an order entry field, and a wild card field, because this informs the user of the status of orders.

Response to Arguments

13. Applicant's arguments with respect to claims 1-18 and 20-44 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- **Williams et al.** (U.S. Patent No. 5,999,918) discloses a computer interface system that includes interactive interface controls as well as aural and kinetic interface controls to assist in educating a user, in profiling a user, and in controlling and monitoring the implementation of actions involving probabilistic distributions;

Art Unit: 2165

- **Wiseman** (U.S. Patent No. 5,168,446) discloses a system is provided for processing spot trades in selected commodities among a group of trading stations in a communication network through a series of structured stages;
- **Ferstenberg et al.** (U.S. Patent No. 5,873,071) discloses, in a preferred embodiment, this invention includes software processes distributed on one or more computer systems that exchange messages in order to facilitate an intermediated exchange of financial commodities between a plurality of participants.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Forest Thompson whose telephone number is (703) 306-5449. The examiner can normally be reached Monday-Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent Millin, can be reached at (703) 308-1065.

The fax number for Formal or Official faxes to Technology Center 2100 is (703) 308-9051 or 9052. Draft or Informal faxes can be submitted to (703) 308-5357.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

March 26, 2001 /FOF


VINCENT MILLIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100